

## **PRE-ALPINE METAMORPHISM IN THE EASTERN PART THE WESTERN CARPATHIANS AND ITS CORRELATION WITH THE EASTERN ALPS**

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The Western Carpathians are assumed as part of the Austro-Alpine units that originated by collision of Africa-related continental blocks on the southern margin of Europe. To compare metamorphic evolution between different units garnet-bearing metabasite were investigated. Metabasites, exposed in four basement units in the eastern part of the western Carpathians (Zemplinicum, Branisko, Cierna Hora and Gemicum), are characterized by the presence of amphibole (magnesiohornblende, tschermakite), garnet, plagioclase and accessory titanite, rutile, ilmenite and quartz. Textural relations and mineral zonation indicate a retrograde P-T path for all units with peak of 1.0 GPa at ca 700°C in the Branisko, Gemicum and Cierna Hora and 0.8 GPa/ 700°C in the Zemplinicum units. Retrograde minerals reveal mostly greenschist- to epidote-amphibolite facies conditions (500°C/ 0.3-0.4 GPa), but some metabasites, associated with migmatites and late Variscan granites contain low-pressure amphibolite facies minerals. Most metabasites from the Middle Austro-Alpine units east from Tauern Window indicate, similar to the western Carpathians, amphibolite facies conditions, however amphibolized eclogites are also present at Hochgroessen. Fresh eclogites contain omphacite (jadeite = 39mol %), garnet and edenitic amphibole. Temperature of 700°C was obtained for eclogite facies metamorphism with a minimum pressure of 1.5 GPa, indicated by maximum jadeite content in omphacite. Thermobarometric calculations for amphibole-omphacite-garnet equilibrium give pressures of 1.8-2.2 GPa at 700°C. Amphibolized eclogites consist of amphibole (pargasite, tschermakite, magnesiohornblende and actinolite), symplectites of Na-poor-clinopyroxene (5-8 mol % jadeite) + albite ± amphibole and zoisite which give a pressure of ca 0.6-0.8 GPa at 590-640°C.